1: Thurston & Rangachari E,G-4,5 (no date) 1909
AW50 Badaga AW50

kallu. There is, further, a platform, made of bricks and mud, called mandhe kallu, whereon the Badagas, when not working, sit at ease. In their folk-tales men seated thereon are made to give information concerning the approach of strangers to the village. Strangers, who are not Badagas, are called Holeya. The Rev. G. Richter gives * Badaga Holeya as a division of the lowly Holeyas, who came to Coorg from the Mysore country. In front of the houses, the operations of drying and threshing grain are carried out. The cattle are kept in stone kraals, or covered sheds close to the habitations, and the litter is kept till it is knee or waist deep, and then carried away as manure for the Badaga's land, or planters' estates.

"Nobody," it has been said, † "can beat the Badaga at making mother earth produce to her utmost capacity, unless it be a Chinese gardener. To-day we see a portion of the hill side covered with rocks and boulders. The Badagas become possessed of this scene of chaos, and turn out into the place in hundreds, reducing it, in a few weeks, to neat order. The unwieldy boulders, having been rolled aside, serve their purpose by being turned into a wall to keep out cattle, etc. The soil is pounded and worried until it becomes amenable to reason, and next we see a green crop running in waves over the surface. The Badagas are the most progressive of all the hill tribes, and always willing to test any new method of cultivation, or new crops brought to their notice by the Nilgiri Horticultural Society."

Writing in 1832, Harkness states ‡ that "on leaving his house in the morning the Burgher pays his adoration

* Manual of Coorg. † Pioneer, 4th October 1907.

‡ Description of a singular Aboriginal Race inhabiting the summit of the Neilgherry Hills.

2: Hockings E-4,5 (1962-1977) 1980
AW50 Badaga AW50

103 Number of villages with, as referents:

dense forest	28
forest verge and clearing	33
open grassland	16
swampland	5

175 361 We obviously cannot push the meaning of such figures very far, but they do suggest that (at least for floral toponyms) more often than not the Badagas settled elsewhere than in the open but exposed grasslands favoured by the Todas for grazing. Beyond telling us the obvious—that swampland was a least-favoured locale for Badaga settlement—the latter break-down does make it clear that within their zone of occupation dense forests and clearings or the verges of woodland were much favoured over grasslands or savannas for village sites. The extra work needed to make fields by slash-and-burn techniques in the forest was more than compensated for by the much richer soil available there as compared with the lateritic grasslands and swamps where the Toda buffalo herds roamed. (Hamlets with toponyms referring to rocks and stones, it is important to note, are often located in areas that are or were forested; large trees beside their temples may still bear witness to this.)

103 Among the toponyms referring to particular plant species there are two mentioning millet:

Battakore (any millet)—at 2,050 meters
Togalaṭṭi (jungle dholl, a wild millet)—at 1,900 meters

Gamble's admirable *Flora of Madras* lists the ranges in elevation for the following millets (among others), all of them important in the Nilgiri economy:[8]

korali—Italian millet *(Setaria italica)*—'widely cultivated'
sa:me—slender millet *(Panicum miliare)*—up to 2,150 meters
tene or navane—black Italian millet *(Sacciolepis indica)*—up to 2,000 meters
baragu—Kodo millet *(Paspalum scrobiculatum)*—up to 2,150 meters
ra:gi—finger millet *(Eleusine coracana)*—up to 1,500 meters

● 243 Metz's mid-nineteenth century account of the chief millets of the Nilgiris adds a little to our understanding of micro-environmental differences in their cultivation on the plateau:

2: Hockings E-4,5 (1962-1977) 1980
AW50 Badaga AW50

•243 The most common grain is what the natives call Korrali, which ... grows best in the colder districts Kundenad and Mekanad where the other finer grains do not grow.

Sāmé ... which is considered the best kind of the several small grains of the Hills. It grows in the warmer districts and must have better soil.

Tenney or Navoney ... which also grows only in warm places ...

Varagu ... which grows only on the slopes of the Hills in feverish places and requires ... a warmer climate, than the Hill plateau affords.

Ragy ... grows also only in places where the cold Monsoon wind cannot come ... (Metz, 1864, 152–153)

In general a careful observer, the Rev. Metz (who roamed the plateau daily for a quarter of a century) mentions here *baragu* and *ra:gi*, two species that were cultivated mainly by Kurumbas and Irulas on the lower slopes because of the greater warmth needed. Though grown occasionally in the lowest Badaga hamlets, neither was an important crop. The other three species were the main subsistence crops for Badagas.

175 177 361 [182] We are led to the conclusion that the Badagas displaced Kurumbas and perhaps some Todas as well in the zone which they made their own, and which was best suited to dry cultivation of their millets. While the upper limits of the zone were apparently determined by the viability of these millets, the lower limits may have been determined not by horticultural requirements but by the elevation above which malarial parasites will not breed, about 1,000 meters. (The full development of the *plasmodium* parasites in mosquito requires a minimum daily temperature of 60°F (15.6°C), which is only maintained at the lower elevations relegated to the Kurumbas, Irulas and others.) In the mid-nineteenth century Hodgson (1856, 499–500) noted plateau sites 'where formerly Kurumba villages existed but where none are now found. It is well known that the Kurumbas were driven down from the healthful summit to the malarious slope of the hills. ...'

318 [175] Not only did the Badaga settlers displace residents from these several tribes: they also removed much forest cover and radically changed the Nilgiri ecology, in the view of many experts, well before the first British planters arrived in the eighteen-forties.

There can be little question that these tracts, which are now

2: Hockings E-4,5 (1962-1977) 1980
AW50 Badaga AW50

NOTES

1. Adapted from Zvelebil, 1955, 243–244. (For 'Kurubas' read 'Kurumbas'.) In fact a number of other tribes are interconnected socially and economically with these four, and an adequate account would embrace nearly a dozen communities.
2. Roughly one Kota to every ninety Badagas (1961); see Appendix 1 and 2.
3. 'The Todas claim that the Kotas are . . . artisans specially brought up from the plains to work for them'; Thurston, 1909, vol. IV, 7. For the location of Kota villages, see Map 2 above.
4. Respectively *Panicum miliare* and *Eleusine coracana*.
5. Emeneau, 1946, 257. Harkness (1832, 109, 135) noted: 'Each Burgher [Badaga] community now pays . . . at the rate of eighty measures [probably 65 litres] for each plough of land'. But at Kotagiri the Kotas got 182 litres from a village. Later Breeks, 1873, 42, recorded that the Kota got from each village from 37 to 74 litres of each kind of grain grown.
6. Thurston, 1909, vol I, 85. The Wodeas alone do not cook in earthenware.
7. Nowadays any small piece of iron is used; the cow is always a gift of the Badaga's wife's father.
8. If a Toda or Badaga animal strayed into a Kota herd for one or more nights it would be returned to the owner, but the Kotas would make a point of never eating that particular animal. On nineteenth century practices, see 'Rifle', 1872, 32.
9. Emeneau, 1946, 261; Mandelbaum, 1955, 241. Each Kota village constitutes a commune, separate from the contiguous Badaga communes but answerable to the *parpati*, the Badaga head of that division *(na:ḍu)* of the plateau.
10. The music and dance are performed on the *kəri*, the work-space in front of each house.
11. More practicable tools are used for the real work.
12. Today the Kota simply borrows an old hoe in the Badaga village and then covers it with mud as a gesture 'to make it into a new hoe'.
13. Belli Gowder, 1923–1941, 15. The last time these rituals were performed was in 1936, when each household in Tanga:ḍu had to contribute a minimum of thirty rupees; see Plates 13–14.

2: Hockings E-4,5 (1962-1977) 1980
AW50 Badaga AW50

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Pl. 9

[following p. 248-I]

2: Hockings E-4,5 (1962-1977) 1980
AW50 Badaga AW50

Plate Section

361 Plate 1 A typical Badaga hamlet (Dimbaṭṭi), above the valley floor but sheltered by a hill from the south-west monsoons. Note the strips of land running downhill. The well in the foreground is new.

342 Plate 2 Typical work-space (ke:ri) in front of houses in Ka:ṭe:ri. The two-story house is a twentieth-century innovation. The poles carry electricity to most houses.

291 Plate 3 A Toda couple, both wearing embroidered shawls (pu:tkuḷy).

301 643 Plate 4 Pāda Rāja Gowder, paramount chief of the Badagas since 1956, and headman of Tu:ne:ri. His gold earrings are of a traditional design.

302 877 Plate 5 Two schoolgirls carrying their lunch, O:ranaṛi hamlet. Both have an auspicious mark on the brow.

302 759 Plate 6 Sithamma, grandmother of the girls in Plate 5; she lived in O:ranayi, was a traditional Lingayat, and a noted herbal therapist. Her gold ornaments are traditional.

000 177 764 Plate 7 Kumba:ras in Kempola hamlet, here enshrouded in mist.

Plate 8 Kotas from Kolmel playing for Lingayats dancing during a funeral at the neighbouring hamlet of O:ranayi, 1963. Women do not dance in public.

● 243 231 Plate 9 Cattle threshing grain on a work-space in O:ranayi. The hired labourers are non-Badagas.

496 291 Plate 10 Women's work-group outside a house in Ki:ṛkunda village. All wear sarees in place of the traditional dress.

778 782 Plate 11 The Goddess Hette with bell, a wreathed *linga*, and a tray with plantain and half-coconut offerings, decorating a Lingayat temple in Ka:ṭe:ri.

623 632 Plate 12 Council of elders at Ke:ti village. The commune headman is on the extreme left, in white.

[p. 25]

4: Hockings E-5 (1962-1977) 1980
AW50 Badaga AW50

(2) The lower plateau, ranging from about 5,000 to a peak at 8,640 feet, where over 350 Badaga hamlets are located. (3) The escarpments and lower slopes, primarily the home of the Kurumba and Iruḷa tribes, who are swidden cultivators still practising some hunting and gathering, and important to Badagas for their sorcery. (4) The more westerly Waina:ḍ Plateau, averaging about 3,000 feet in elevation, which is the territory of Kurumbas, Paṇiyas, Maunta:-dan and Waina:ḍ Chettis, and of eight hamlets of Badagas, here known as Waina:ḍ Gaudas. Irrigated rice, and tea and coffee, are the most important crops there today.

Since the culture of the Waina:ḍ Gaudas has been dealt with elsewhere (Ranga 1934; Hockings 1979a), and in any case is more like a variant subculture of the Maunta:dan Chettis than like that of the Nilgiri Badagas, I will pay no attention to them in the present study, but confine myself to the Badagas of the Nilgiri Massif.

The environs of these Nilgiri Badagas have been discussed in some detail in a paper on Badaga placenames and cultural ecology (Hockings 1974), and have been accurately described in the following account of the lower and upper plateau:

> The plateau is a true tableland, its average height being very uniform. But there is not a square mile of level ground in the whole of it, its surface being broken by endless undulations which in places swell into considerable and distinct ranges. It rises most abruptly from the plains below it; and on the west. . .its sides are often sheer, bare walls, hundreds of feet in height and too steep even for trees to obtain a footing on them. Elsewhere dense forest covers almost the whole of its slopes.
>
> It is first of all divided east and west into two fairly equal but dissimilar parts by a range of heights running north and south of which Dodabetta ('big mountain') is the tallest. . . .
>
> East and south of the Dodabetta range. . . the plateau. . .is extensively cultivated by the immigrant tribe known as the Badagas. This does not improve its appearance; the great forests have mostly been felled and their place taken by the poorest low scrub or by fields of miserable cereals surrounding the squat red-tiled houses of numerous hamlets; the country is deeply scoured by every shower of rain until the infertile red and yellow sub-soil clays are laid bare; and, owing to the Badagas' former custom of

6: Noble K-4,5 (1962-1963) 1989
(1800-1963)
AW50 Badaga AW50
Kota AW55

B Ko 433 [241] Ko 433

and other cereals, and probably from their kitchen gardens obtained most produce which was bartered or sold. In the later part of the last century shifting slash-burn agriculture was legally abolished. During this century the Badagas and Kotas abandoned the use of plows and turned to commercial potato production. Economic differentiation between the two groups is based mainly on the fact that Kotas have been partially supported by basketry, blacksmithing, carpentry, hide curing, pot making, and the playing of music. These supplementary activities of the Kotas, practiced to varying degrees by other Indian groups, are commonly associated with low social ranking.

1. The Badagas

B 861 [175] [311] B [342] B 243 [351] [361] B 241 [361]

Occupance pattern. Most Badaga hamlets and villages are located above 6,000 feet and east of the grasslands inhabited mainly by Todas (Figure 2). Harkness' description of Nanjanad before 1832 indicates that the basic Badaga occupance pattern remains unchanged. There was cultivated land around the village, and cattle grazed on nearby grasslands. Houses aligned horizontally into two house-rows on a hill side had joined front porches facing the down slope. A flat courtyard before each house-row was used to hand-thresh and dry grain in the sun. Both courtyards were edged on the outside by low stone walls. At one end of the village there was a compacted circle on which cattle trod out grain, and at the other end there were several cattle enclosures (Harkness 1832: 36-37). Badaga farmers continue to live together in communities, and they cultivate nearby kitchen gardens plus near to distant dry fields (Plate X, A). Coffee, tea, and multilayer gardens

241 with mixed plants are also maintained, but these gardens may be miles away from their owners' houses and on outer Nilgiri slopes. Because
423 land is divided equally among sons upon a father's death, extensive
428 land fragmentation has taken place. To prevent further fragmentation, there is now a tendency for sons to share and jointly manage land.
311 Communal pastures are close enough to permit the keeping of livestock
361 in communities. Individually owned and communal plots covered with
245 acacia, eucalyptus, and temperate fruit trees now occur near Badaga
137 communities. Due to intensive or slowly continued tempera[illegible] forest
318 clearance, only a few small remnant patches of natural fore[illegible]main on the slopes near many hamlets and villages.

The outstanding features of Badaga hamlets and villages are the
361 house-rows with compacted earth courtyards edged by low walls (Figure
351 17). House rows within a single community usually parallel each other and are frequently aligned in an easterly-westerly direction, but on
861 flatter terrain they may surround a courtyard on two sides. Because
364 the Badagas consider it sinful to throw waste water toward the sun,
783 Lord Shiva's emblem, through alignment of houses in an easterly-westerly direction housewives may throw waste water through the back door or over the front courtyard wall without throwing it toward the sun.
841 One dwelling within a community house-row is set apart as a confinement place for menstruating women or women undergoing a postnatal pollution
368 period. In addition to dwellings, house-like temples are built into
243 house-rows. Grain is threshed and agricultural produce or firewood is
313 dried on the courtyards. These also serve as playgrounds for children,
857 as sites for performance of ceremonial rites, and as dance arenas
796
535

[TEXT CONTINUED ON PAGE 1231]

243
221

Through irrigation farmers are now growing out of season crops, but irrigated crops still annually cover very small acreages. To take advantage of demands for potatoes during the tourist season reaching a peak in May and June, some farmers now plant potatoes from January into February. As early growth occurs during the dry season, potatoes would perish without irrigation at intervals. Expected mango showers during maturation aid in final development, and potatoes are harvested in May or June. Grain or "English" vegetables may then be grown without irrigation and harvested from September into October. Afterwards, land is left fallow until January or the main crop season (karbokan). Three harvests per year are obtained by a few farmers. Near the end of November, 1962, a man planted potatoes, kidney beans, and peas (Pisum sativum L.). Produce from these irrigated plants was harvested in March, 1963. Ground was prepared immediately for the main crop season, when unirrigated finger millet with mixed-in amaranth were sown. After harvesting of grain in August, potatoes with intercropped kidney beans or peas were grown without irrigation. The resultant harvest took place in November.

243

Past and present dry field crop production. By using several references to their agriculture, Badaga dry field crop production in the last century may be outlined.[1] Crops were cultivated then on both terraced and non-terraced land. Due mainly to the need for protection against livestock, plots near communities were fenced in or protected by deep ditches and piled brushwood walls. When ground left fallow for long periods was prepared for cultivation, turf was pared off,

243 placed in small heaps, and burned when dry. Plows used in soil preparation were of a general type presently used in southern India. Some [407] doubtlessly had a metal strip attached to the share, but Ouchterlony [175] (1848: 31) stated that the share was "almost invariably a piece of pointed wood, of a tough description, hardened in the fire, and not shod with iron, or any other metal." Plowing was performed by two [492] methods. In the first, a lead team of yoked cattle drawing a plow was followed by five or six similar teams drawing plows. After plows scraped a single furrow, paralleled furrows were formed by forcing the [492] cattle to pull plows in lines paralleling the first. When the other method was used, a single team of yoked cattle pulled a plow over a field as many as five times. During each replowing, furrows were [462] crossed. After the men had finished the plowing, women and children [857] with small hoes worked over the soil, broke up clods, removed weeds, and piled them in small heaps. After the weeds were burned, the ashes were scattered over the ground. Cattle manure from cattle pens was mixed with community trash, loaded into baskets, and carried to fields. After being broadcast, the fertilizer was worked into the soil through another plowing or with hoes. Men broadcast seeds, or planted seeds, plants, and seed potatoes (later 1800s) in rows. Sown seeds were covered by a last plowing or light hoeing. Women and children usually weeded the fields two or more times. To speed this process up, rows [592] of weeders sometimes worked cooperatively. Harvesting was performed [412] by all family members, and sickles were the main harvesting implements. Bundles of straw with grain or baskets loaded with grain heads were carried as head loads to threshing floors. Temporary threshing floors

243 were constructed in the fields, but there were also well cowdunged permanent threshing floors within communities. To thresh out grain, cattle were muzzled, lined up, tied together and to a central post, (462) and then driven around in circles over straw and grain. Women, however, used threshing sticks to thresh out grain on courtyards fronting (251) houses. Sun-dried grain was stored away in large conical baskets plastered inside and out with cowdung, but finger millet was often kept in pits.

241 407 In 1908 plows were still being used, but by 1930 they were no longer in general use (Francis 1908: 166; Carl 1930: 32). The abandonment of plows resulted from the need for deeper soil turnover and ridging in potato cultivation. This was touched upon by Robertson (1875: 26), who stated that "as the native plough cannot ridge the land, the preparation of the soil, except the mere stirring and loosening, is all done by manual labor, and the cost of putting in the crop is much higher than it need be were a mouldboard plough used; . . . ." Three Swedish moldboard plows were sent to the Nilgiris in 1882-83, and a Badaga purchased one after a plowing exhibit at Ketti (Madras Department of Revenue Settlement and Agriculture 1884: 19; M.D. of R.S. and A. 1886: 6). However, Badagas never adopted moldboard plows. If they had done so, it is likely that plows would still be used. In 1908 244 412 potato plots were prepared through use of digging forks, introduced by the English, and hoes (Francis 1908: 167-168). During World War I, when potato production was greatly increased, the borrowed English digging fork rapidly replaced the plow. There is a distinct possibility that varied hoe-forks now used by Badagas were locally developed in that

244 up with hoes and hoe-forks have been dried in the sun, they are removed
251 in baskets to houses, storage huts, or awaiting trucks.

When grain is to be sown, soil is turned over by women using
243 large- and medium-sized hoe-forks. Fields to be planted with grain
462 are infrequently manured, and chemical fertilizers are seldom applied. If manure or fertilizer is used, it will be spread over the field and worked in. Grain broadcast over fields by men is then worked into the soil with hoes or hoe-forks. In the eastern Nilgiris, amaranth, mustard, finger millet, and Italian millet are still sown together. Amaranth, mustard, Italian millet, and little millet are also mixed. Barley, buckwheat, and wheat are usually sown separately. Women and
[412] children seldom weed grain fields more than once. Sickles are standard harvesting implements, and women usually remove the grain heads.

Varied processing of grain heads depends upon the grain har-
243 vested. Little millet is cut near the base of the stalk. Grains are then trodden out by cattle moving about a central post, as in former times (Plate X,D). Threshing-floors may be temporarily located in
243 fields, or permanently near communities and on community courtyards.
251 Threshed little millet dried out on courtyards for several days is winnowed and packed away in sacks or wooden chests. Finger millet grain heads cut off plants are tightly packed into sacks. After sack openings have been closed with bound string, the finger millet is stored away in warm parts of houses for four or five days. During this time the grain turns dark brown, but should not be permitted to blacken. When the correct color is reached, grain heads are removed to threshing floors. The treaded heads are saved and dried, so that remaining grains

243 may be removed through hand threshing by women with threshing-sticks.
251 Finger millet is dried in the sun until individual grains crack when crushed between one's teeth. It is stored away after winnowing and may be kept for years without spoiling. Underground storage pits for finger millet are no longer in general use. After barley and wheat heads are removed, they are dried in the sun. Women, working on courtyards, use threshing-sticks to thresh the grain. Following further sun-drying and winnowing, grain is ready for storage.

231 (175) Livestock. From the early 1800s Badagas have reared chickens, buffaloes, cattle, goats, and sheep (Keys 1812: 11; Birch 1838: 103-105). They never keep pigs, and chickens are not commonly reared.
262 Because of close ties between bulls and Lord Shiva, the Saivite Badagas are not beef eaters. Mutton is eaten more than any other meat, so
234 goats and sheep are kept as a meat supply. Milk processing into curds,
462 butter, buttermilk, and clarified butter had been carried out by men in the sacred hagotus within houses. Only one to a few families in
231 each community now own livestock, and sometimes a single male within a family will take care of the livestock. There are a few families which
231 depend almost entirely on sale of mutton, milk, and milk products for
434 a livelihood. Most, however, use livestock as a supplementary income source, or to obtain meat and milk for home consumption.

231 Religious ties between Badagas and their buffaloes or cattle,
771 as demonstrated at Bergani, are also present in communities. Monday,
796 Lord Shiva's day and a holiday, is a day sacred to the herd. In former times oxen were not worked and cows were not milked on this

351 and house floors is not only an ancient Hindu custom, but a useful
356 one in that it helps keep termites away.

Rice is everywhere the predominant food crop, and wet rice
• 243 production is concentrated in broad valley bottoms (Plate XII, A).
As a result, valley sides are seldom terraced. All Badaga houses,
361 whether they be within nucleated centers or scattered around, are
located on hillsides or hilltops next to lower-lying wet rice fields.
Women thus have to fetch water from streams in the valleys below.
(343) Occasionally, small huts or shelters (pandals) for storage or work
are erected near houses. Nilgiri Wynaad Badagas do not build temples
368 in house-rows, but do construct temples in separate worship centers
with pagoda trees. After the single wet rice harvest, buffaloes and
231 a few cattle are kept at night in periodically shifted circular bam-
boo pens erected on dried fields. While rice is growing, the same
livestock are housed nightly in huts with no set form located at some
distance from dwellings. Threshing floors and stacked hay lie near
241 dwellings. Most houses are surrounded by multilayer gardens which
offer cooling shade during each dry season and protection against
torrential rain with high winds during the rainy monsoon seasons.
Close to houses there may also be small kitchen gardens or single
layer gardens. Scattered dry fields on hills are located near or at
231 some distance from houses. Livestock (goats and sheep were not seen
by me) are grazed on 1) rice stubble left after each rice harvest,
2) grasses growing over dry fields untilled for some time, 3) grasses
within nearby degenerate dry and moist deciduous forest or bamboo
368 thickets, and 4) savannas. In the area associated with each community

241 and yam (compare with Table II).

Flowers and leaves of fishtail palms are used for ornamental purposes. Badagas also grow bananas in single layer gardens. After 245 cutting off stems laden with green bananas, Badagas and Paniyas place them in banana pits with pots in which green wood is burned (Figure 23). The heat and smoke within pits sealed with planks and mud cause bananas to ripen rapidly in two or three days. Leaves from planted amaranth are the only parts eaten. Badagas also eat leaves plucked 222 from wild amaranths (Amaranthus gracilis Desf., A. spinosus L.) 262 commonly growing in gardens. Leaves and roots of planted taro are 137 edible. However, only the leaves cut from wild taro (Colocasia antiquorum Schott) growing next to streams and in gardens are eaten. 241 Ceara rubber plants (Manihot glaziovii Muell. Arg.) descended from stock used in experimental rubber production on adjacent plantations are now weeds occasionally left growing in gardens. Brinjal and chili seeds are first sprouted in a small nursery on stilts (Figure 23). Both plants are also planted in kitchen gardens with parallel earthen ridges. At Hundhatti, in 1963, there was a ridged kitchen garden with alternated kidney beans, brinjals, chilies, and maize. Elephant foot yam or taro are occasionally grown on ridges within single layer shaded gardens (Plate XII, F). Tapioca is increasingly being cultivated as a dry field crop planted on hoed ridges, but is not a typical Badaga crop.

243 Dry field agriculture. As upland dry fields are often left fallow, only small acreages are covered with crops at any single time.

6: Noble K-4,5 (1962-1963) 1989
(1800-1963)
AW50 Badaga AW50
Kota AW55
Kurumba AW56
Toda AW60
Madras Tribes AW63
Kasuva

243 In field preparation, natural vegetation which has spread into fallow fields is cleared, dried, and burned. Ashes are then spread over the earth. If available, livestock dung is applied. Soil is loosened by periodic plowings with a plow drawn by a single team or by several teams drawing plows simultaneously. Earth clods are broken with hoes and hoe-forks, and the same implements are used to work broadcast seed (221) into the soil. Sowing takes place mainly in June and July, so that harvesting will occur during a period of declining rainfall in October, November, and December. Finger millet is commonly grown, and little (241) millet is occasionally cultivated. Mustard may be mixed with the grain crop, and in one field I saw there were pumpkin vines growing over termite hills. Some fields are quite neglected, and others are weeded to varying degrees. In harvesting, sickles are used to remove grain heads. When finger millet is harvested, the grain heads are first processed in the same way that Upper Nilgiri Badagas process them. (250) Grain is stored after being trampled out by buffaloes or cattle and dried in the sun. Men are responsible for heavy work in field preparation, plowing, sowing, and care of livestock trampling out grain. 243 462 Women, aided sometimes by children, do most of the other work associated with dry field cultivations.

Wet rice cultivation. During the dry season, after livestock 243 have eaten remaining rice stubble, exposed soils on fields become (231) hardened and cracked in the sun's heat. Livestock penned on changed (221) locations help fertilize the earth. Starting in April, after some mango showers have loosened field surfaces, the men prepare a few

(243) (220) (492) fields. A single plow, usually pulled by two buffaloes, may be drawn back and forth over a field. At irregular intervals of days or even weeks the field will be replowed until it has been plowed four to six times, with former plow lines being crossed at each replowing. If several buffalo teams are available, plowing may be speeded by teams (312) working simultaneously in a single file. Dikes to retain rainwater must also be rebuilt or repaired with the aid of hoes (Figure 15), and at least the final plowing is performed in fields well soaked by (401) rainwater backed up behind the dikes. Drawn harrows aid in the leveling and mixing of soil. Puddlers are lastly used to flatten and smooth surfaces about to receive rice seeds. Prior to broadcasting, the seeds are usually mixed in a cowdung wash and left sitting for several days in a small heap covered with leaves. Broadcast seeds stick in mud and there take root. Plants may remain untouched until harvesting, but most seeds take root in selected nursery fields from which plants are later pulled up and transplanted.

(221) Because seeds are planted on nursery fields from April into June, the transplanting period extends from June into August. It is during this period that most fields are plowed, harrowed, and puddled (Plate XII, E). In addition to supplemental dung fertilizer deposited on the fields, green leaves are trampled into the mud by the feet of (462) humans and livestock. Field preparation is men's work, but only women transplant young rice plants. The young plants, pulled up after approximately 40 days, are tied into bundles. By twisting off plant tops, each bundle top is flattened. Bundles carried to prepared fields are broken up individually as a field is planted. Two or three plants

B 243 B (462) (857) are planted together each time, and small clumps are spaced about nine inches to one foot apart. The amount of weeding performed by women and children before or after rice is transplanted depends upon the individuals concerned, but some weeding is usually done. As rice ripens, watch-huts built on stilts amidst fields or on hill slopes nearby are occupied in shifts by men, women, or children who make noises to drive away animals and birds. Harvesting takes place mainly in January, but rice is also harvested in December and February. Grain removal is facilitated by the fields drying up before harvesters, mainly women, start working with sickles. Cut rice stalks are carried in headloads by men and women to threshing floors near the houses. Muzzled bulls are strung together and forced to walk abreast around posts rising from threshing floors. Grain on hay laid beneath the bulls' feet is thus slowly threshed out. Months later, other grain is threshed in like manner from straw piled on stilted platforms or straw heaped about poles rising near threshing floors. Sun-dried grain is stored within large grain baskets or wooden chests placed in homes. The remaining threshed straw is fed to livestock or used for thatching.

B (221) B (482) B (251) (231)

B 463 434 439 Additional income. As far back as 1881 the Badagas were working on neighboring plantations, and a fair number of males are presently employed on plantations (Jennings 1881: 60). A few Badagas obtain income by selling milk to coffee and tea shops in nearby villages.

2. The Kotas

Ko 342 Most Kotas at Kalac, Cudalur, live in eight houses with brick